

CLAIMS:

- 5 1. An installation for providing a concentrate burner, that is adapted on top of a reaction shaft of a suspension smelting furnace, with continuous and constant feed of fine-grained matter, comprising a bin having an inlet and an outlet for the fine-grained matter; a feed control unit for providing the feed of the fine-grained matter with accurately controlled feed rate; and
- 10 a pneumatic conveyor adapted to transport the fine-grained matter up to the top level of the suspension smelting furnace;  
**characterized** in that,  
the outlet of the bin for the fine-grained matter locates essentially at a lower level than the top of the reaction shaft;
- 15 the feed control unit is adapted to receive the fine-grained matter from the outlet of the bin and to provide the pneumatic conveyor with the feed of the fine-grained matter;  
the pneumatic conveyor is adapted to provide the concentrate burner with a feed rate that equals with the feed rate provided by the feed
- 20 control unit; and  
the concentrate burner is a sleeve type burner or a diffusion type burner.
2. The installation of claim 1, characterized in that the fine-grained matter comprises metal concentrate.
- 25 3. The installation of claim 1, characterized in that the fine-grained matter comprises metal concentrate and fluxing agent.
- 30 4. The installation of claim 1, characterized in that the fine-grained matter comprises metal concentrate, fluxing agent and flue dust.

- 5      5. The installation of claim 1, characterized in that it comprises a first bin for a dried mixture of metal concentrate and fluxing agent, a second bin for flue dust, a first feed rate controller for the mixture of metal concentrate and fluxing agent and a second feed rate controller for the flue dust.
6. The installation of claims 1 – 5, characterized in that the pneumatic conveyor is a dilute-phase pneumatic conveyor.
- 10      7. The installation of claims 1 – 5, characterized in that the pneumatic conveyor is a dense-phase pneumatic conveyor.
- 15      8. The installation of claims 1 – 5, characterized in that the pneumatic conveyor is an air-lift type pneumatic conveyor and the air-lift is provided with an expansion vessel adapted to feed the particulate matter into the burner of the suspension smelting furnace via an air-lock feeder and an air-slide conveyor.
- 20      9. The installation of claims 1 – 5, characterized in that the feed control unit is a loss-in-weight controller and the pneumatic conveyor is a dilute-phase pneumatic conveyor.
- 25      10. The installation of claims 1 – 5, characterized in that the feed control unit is a loss-in-weight controller and the pneumatic conveyor is an air-lift type pneumatic conveyor.
- 30      11. A method of providing a concentrate burner such as a sleeve type burner or a diffusion type burner, that is adapted on top of a reaction shaft of a suspension smelting furnace, with uninterrupted and controlled feed of fine-grained matter comprising metal concentrate, characterized in that the method comprises steps of feeding fine-grained matter in a bin having an outlet at a lower level than

the burner;

forming and sustaining in the bin a storage of the fine-grained matter corresponding with at least one hours feed of the suspension smelting furnace;

5 feeding fine-grained matter in a feed rate controller unit that provides the pneumatic controller with an uninterrupted and controlled feed of the fine-grained matter; and

conveying the matter with the pneumatic conveyor in the burner of the suspension smelting furnace.

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12. The method of claim 11, characterized in that the feed rate controller operates according to the principle of loss-in weight - type controller.

15 13. The method of claim 11, characterized in that it further comprises a step of feeding flue dust into the pneumatic conveyor.